

CLAIMS

What is claimed:

1. A communication system for establishing bidirectional communication between a first device and a second device, the system comprising:

first asynchronous encoder logic for connection to a first input/output pin on the first device, said first asynchronous encoder logic receiving a first signal, current first state, current second state and second signal and generating a next first state;

a first gate receiving said next first state and generating a second drive signal;

a second bus driver for connection with a second input/output pin on the second device, said second drive signal controlling a state of said second bus driver to control the state of a second signal at said second input/output pin;

second asynchronous encoder logic for connection to said second input/output pin on the second device, said second asynchronous encoder logic receiving said first signal, said current first state, said current second state and said second signal and generating a next second state;

a second gate receiving said next second state and generating a first drive signal;

a first bus driver for connection with said first input/output pin on the first device, said first drive signal controlling a state of said first bus driver to control the state of said first signal at said first input/output pin.

2. The communication system of claim 1 wherein:

said first gate generates said current first state from said next first state, said current first state being fed back as an input to said first asynchronous encoder logic and said second asynchronous encoder logic.

3. The communication system of claim 1 wherein:

said second gate generates said current second state from said next second state, said current second state being fed back as an input to said first asynchronous encoder logic and said second asynchronous encoder logic.

4. The communication system of claim 1 wherein:

said second bus driver is a transistor having a terminal connected to ground and a terminal for connection to said second input/output pin.

5. The communication system of claim 1 wherein:

said first bus driver is a transistor having a terminal connected to ground and a terminal for connection to said first input/output pin.

6. The communication system of claim 1 wherein:

said first asynchronous encoder logic and said second asynchronous encoder logic control the state of the communication system such that only one of the first device and the second device transmits data at one time whereby the direction of communication is autonomously controlled by said first asynchronous encoder logic and said second asynchronous encoder logic.

7. A system comprising:
a first device having a bidirectional first input/output pin;
a second device having a bidirectional second input/output pin;
a communication system coupling said bidirectional first input/output pin with said bidirectional second input/output pin, said communication system autonomously controlling a direction of communication between said first device and said second device such that either said first device sends data to said second device or said second device sends data to said first device without a data direction control line.

8. A method for establishing bidirectional communication between a first device and a second device, the method comprising:

receiving a first signal, current first state, current second state and second signal and generating a next first state;

generating a second drive signal in response to said next first state;

controlling the state of a second signal at a second input/output pin in response to said second drive signal;

receiving said first signal, said current first state, said current second state and said second signal and generating a next second state;

generating a first drive signal in response to said next second state;

controlling the state of said first signal at a first input/output pin in response to said first drive signal.

9. The method of claim 8 wherein:

said controlling the state of said second signal and controlling the state of said first signal is performed such that only one of the first device and the second device transmits data at one time.

METHOD AND SYSTEM FOR PROVIDING BIDIRECTIONAL